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NATURAL HISTORY NOTES

The freezing weather at Daytona Beach, Florida, in January, 1977, when a minimum temperature of 23°F occurred at the writer's garden, resulted in the death of many tropical palms, conspicuous among them 30 adult fishtail palms of the multiple-stem species *Caryota mitis*. Virtually all the tallest stems (trunks), numbering over 100, were freeze-killed. Of these dead stems, about a third had flowered and fruited before the freeze, some of them for several consecutive years. The roots of these cluster-forming palms were not frozen, and hence new growth sprang up after warmer weather returned; and barring hard freezes during the next several years, these new shoots will begin forming trunks within three or four years.

Some 20 of the adult trunks, all ostensibly stone dead, have produced pristine inflorescences at intervals of from three months after the freeze to as much as six months afterward. Singular indeed to see a wretched brown pole, with a collapsed crown of foliage, put forth one or more vivid green inflorescences from leaf axils below the brown dead fruits still hanging from the previous year! An obvious speculation is that the palms were shocked by the freeze into trying

to perpetuate the species. What appears to be phenomenal, however, is doubtless not a phenomenon at all, but readily explicable by a plant anatomist or other botanical scientist versed in the mysteries of palm anatomy. It may not be news that freeze-shock sometimes causes plants to attempt reproduction of themselves even if futile, but it is nevertheless startling to observe a green inflorescence emerging from a palm trunk that has been hopelessly dead in all its parts, to all appearances, for half a year. A wasted effort, for no following fruits will mature to the point of seed production. Unluckily black-and-white photographs do not serve to distinguish between dead and living inflorescences of the caryotas under discussion, and so the affected palms are not illustrated in graphic support of this note. The writer does have, however, color slides and also prints that plainly reveal the striking contrasts.

Just how does a long-dead palm trunk put forth a vivid green inflorescence? It only indicates that some parts may survive independently, if only temporarily, the death of a large palm.

Flowering, after apparent death of a stem, has occurred at my location in

caryotoid species other than *Caryota mitis*. One example of *Wallichia caryotoides*, a single-stem palm, put forth an inflorescence two months after being freeze-killed in January, 1977, and now in August as this is written, nearly eight months after the freeze, small fruits are appearing even though doomed not to develop to maturity. This *Wallichia* is now an odd spectacle consisting only of a leafless trunk about eighteen feet tall, with a pennant of small green fruits incongruously hanging from a topmost leaf axil. Another example of flowering after freeze-shock occurred in the same garden shortly after the disastrous freeze of 1962, in this case involving a wrecked *Caryota urens* which soon collapsed and fell apart.

It may not be generally known that most multiple-stem palms, that is, the suckering or cespitose kinds, will again rise from the roots after total destruction above ground level, provided of course that the ground itself has not been frozen and consequently not the roots. Conversely no single-stem palm after destruction ever erects a new stem from its roots. The cespitose kinds might well be termed "resurrection palms," for even such tender ones as pinangas after total destruction above ground commonly put forth new growth from the roots.

From past experience with hard freezes the writer knows that *Caryota mitis* will again rise from the dead, and in fifteen years of normal winter weather will attain to the same size and number of stems it had before the killing freeze.

DENT SMITH
Daytona Beach, Florida

LETTERS

The following is extracted from a letter to Mr. Sten Bergman from Ms. Anne Roebelen:

"I am delighted to know of your interest in the *Phoenix roebelenii* palm

which my uncle, Carl Roebelen, found in Laos on the banks of the Mekong River, Indochina, on the 22nd parallel in the spring of 1889.

"Carl Roebelen was born January 1855 in Geislingen, Germany. After finishing his education, he served his apprenticeship at the summer castle in the King's Garden, Friedrichshafen, Germany and at the Koenigsgarten, Stuttgart, Germany. From there he went to London and was employed by Frederick Sanders, the well-known orchid king of St. Albans.

"Sanders sent him on many expeditions to the Far East in search of rare orchids. When a regular mail service was established between London and the Philippines, among other employees of Sanders, he was chosen to go to the Philippines in search of rare orchids. On one of these trips, while going through the mountains, he discovered the famous *Vanda sanderana* (1883), from which many hybrids have been made.

"After several years with Sanders, he became a freelance collector and made his home in Bangkok, Siam (now Thailand) and married a Siamese woman. They had one son, whom he educated in Switzerland.

"Carl Roebelen never traveled alone, always taking natives with him. On one occasion, they went by foot for 22 days to the northern section of Siam and crossed the Mekong River to Laos, where he discovered the palm. He dug up two plants and with a shipment of newly found orchids went to London. One of these palms he sold at the market to Sanders and the other one he gave to the Royal Botanic Gardens at Kew. Here the palm was compared with many other palms and it was verified by James O'Brien that it was a new palm. It was named *Phoenix roebelenii*.